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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/840,057	05/06/2004	John M. Mulloy	29766-76558	6632
54620	7590	05/09/2006	EXAMINER	
KRIEG DEVAULT LLP ONE INDIANA SQUARE SUITE 2800 INDIANAPOLIS, IN 46204-2079			TRIEU, THAI BA	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/840,057

Applicant(s)

MULLOY ET AL.

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4,6-8,10-13,16-21,23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4,6-8,10 and 11 is/are allowed.
- 6) ☒ Claim(s) 12,13,16-21,23 and 25-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/717,232.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/11 &amp; 03/02/2006</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on January 11, 2006 has been entered.

Claims 1, 7, 12, 21, 25, and 26 were amended; claims 5, 9, 14-15, 22, 24 were cancelled.

### ***Claim Objections***

Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically,

- Line 14, "***renters***" should be replaced by -- ***re-enters*** -- (*for correcting typo error*).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 12-13, 16-18, and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanovsky et al. (Patent Number 6,314,735 B1), in view of Walsham (Patent Number 6,203,272 B1).***

Kolmanovsky discloses a method comprising:

operating a turbocharger (26, 16) including a variable geometry turbine (16) having an inlet passage (not Numbered) to the turbine with a fluid flow area, the fluid flow area having a normal size for an internal combustion engine operating in a normal operating range (See Figures 1, 1A, 1B, 2, and 5, Column 3, lines 39-43);

determining a first temperature (via 29) of the exiting exhaust gas of the variable geometry turbocharger;

determining the temperature of the exhaust gas in the after-treatment system (27), and operatively controlling said reducing based upon whether the temperature of the exhaust gas in the after-treatment system satisfies a threshold temperature condition (See Column 4, lines 19-39); and wherein the fluid flow area has a maximum flow area, and wherein the flow area corresponding to said reduced size is within a range of about zero percent to about twenty-five percent of the maximum flow area (See Figures 2 and 5).

However, fails to disclose moving a nozzle ring, wherein in said moving the nozzle ring moves in an axial direction and wherein the portion of the exhaust gas flows within the turbocharger; and at least one bypass fluid flow path, and the portion of the

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exhaust gas from said bypassing reentering the rest of the exhaust gas flowing to the turbine wheel from the inlet passage at a steep angle or substantially perpendicular thereto.

Walsham teaches that it is conventional in the variable geometry turbine art, to utilize moving a nozzle ring (5), wherein in said moving the nozzle ring (5) moves in an axial direction and wherein the portion of the exhaust gas flows within the turbocharger (See Figures 1-2, Column 2, lines 49-58);

wherein the portion of the exhaust gas from said bypassing reenters the rest of the exhaust gas flowing to the turbine wheel from the inlet passage at a steep angle or substantially perpendicular thereto (See Figure 3);

wherein said moving opens at least one bypass fluid flow path (via 24) in fluid communication with the exhaust gas within the inlet passage, and wherein the bypass fluid flow path is normally blocked when the fluid flow area is of the normal size (See Figures 1-2, Abstract);

wherein said bypassing the portion of the exhaust gas flows through the at least one bypass fluid flow path (via 24) (See Column 4, lines 23-31).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized moving a nozzle ring, wherein in said moving the nozzle ring moves in an axial direction and wherein the portion of the exhaust gas flows within the turbocharger, at least one bypass fluid flow path, and wherein the portion of the exhaust gas from said bypassing reentering the rest of the exhaust gas flowing to

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the turbine wheel from the inlet passage at a steep angle or substantially perpendicular thereto, as taught by Walsham, to improve the efficiency of the Kolmanovsky device.

***Claims 21, 23, 25-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanovsky et al. (Patent Number 6,314,735 B1), in view of Hasegawa (Patent Number JP 61 001829 A), and further in view of Walsham (Patent Number 6,203,272 B1).***

Kolmanovsky discloses a method comprising:

operating a turbocharger (26, 16) including a variable geometry turbine (16) having an inlet passage (not Numbered) to the turbine with a fluid flow area, the fluid flow area having a normal size for an internal combustion engine operating in a normal operating range (See Figures 1, 1A, 1B, 2, and 5, Column 3, lines 39-43);

passing the exhaust gas from the variable geometry turbine to an after-treatment system (27) (See Figure 1); and

determining the temperature of the exhaust gas in the after-treatment system (27), and operatively controlling said reducing based upon whether the temperature of the exhaust gas in the after-treatment system satisfies a threshold temperature condition (See Column 4, lines 19-39).

However, fails to disclose said moving including rotation of a plurality of guide vanes, swinging the plurality of guide vanes; said flowing including bypassing the portion of the exhaust gas around the plurality of guide vanes; in said swinging the radial at least a portion of each of the plurality of guide vanes position being

changed; bypassing the portion of exhaust gas; and the portion of the exhaust gas from said bypassing reentering the rest of the exhaust gas flowing to the turbine wheel from the inlet passage at a steep angle or substantially perpendicular thereto.

Hasegawa teaches that it is conventional in the turbo-supercharger art, to utilize said moving including rotation of a plurality of guide vanes (See Figures 2-4); swinging the plurality of guide vanes (See Figures 2-4, and Abstract); flowing including bypassing the portion of the exhaust gas around the plurality of guide vanes (See Figures 2-4); and swinging the radial at least a portion of each of the plurality of guide vanes position being changed (See Figures 2-4).

Additionally, Walsham teaches that it is conventional in the variable geometry turbine art, to utilize bypassing the portion of the exhaust gas flows around the plurality of guide vanes (via 24) (See Column 4, lines 23-31); and the portion of the exhaust gas from said bypassing reentering the rest of the exhaust gas flowing to the turbine wheel from the inlet passage at a steep angle or substantially perpendicular thereto (See Figure 3); and at least one fluid flow bypass path, the fluid flow bypass path is normally not substantially in fluid flow communication with the exhaust gas when the exhaust gas flow area is defined by the first area (See Figure3).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the method and structural details as taught by Hasegawa; and bypassing the portion of exhaust gas; reentering said bypassing portion to the rest of the exhaust gas flowing to the turbine wheel from the inlet passage at a

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steep angle or substantially perpendicular thereto as taught by Walsham, to improve the efficiency of the Kolmanovsky device.

***Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanovsky et al. (Patent Number 6,314,735 B1), in view of Walsham (Patent Number 6,203,272 B1), and further in view of Hirota et al. (Pub. Number US 2002/0170287 A1).***

The modified Kalmanovsky discloses the invention as recited above; however, fails to disclose the threshold temperature condition being within a range of about 500<sup>0</sup>F to about 700<sup>0</sup>F.

Hirota teaches that it is conventional in the Exhaust gas purification device art, to utilize the threshold temperature condition being within a range of about 500<sup>0</sup>F to about 700<sup>0</sup>F (See Paragraph [0002], lines 9-10).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the threshold temperature condition being within a range of about 500<sup>0</sup>F to about 700<sup>0</sup>F, as taught by Hirota, since this range would have been the normally considerably temperature of the exhaust gas of diesel engines.

Note that the temperature of 500<sup>0</sup>F-700<sup>0</sup>F is fairly equal to the temperature of 260<sup>0</sup>C- 371<sup>0</sup>C.



***Allowable Subject Matter***

Claims 1-4, 6-8, and 10-11 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art fails to disclose or renders obvious the claimed combination of a method of operating a variable geometry turbine having an inlet passage to the turbine with a flow area, which has a normal size for an internal combustion engine operating in a normal operating range including the step of:

**" Regarding claim 1:**

*reducing the size of the fluid flow area from the normal size to a reduced size for exhaust gas heating, said reducing exposes a bypass fluid flow path to the exhaust gas within the inlet passage, the bypass fluid flow path is normally blocked when the fluid flow area is of the normal size."*

***Conclusion***

The IDS(s) (PTO-1449) filed on January 11, 2006 and March 02, 2006 have been considered. Each initialized copy is attached hereto.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB  
May 05, 2006

  
Thai-Ba Trieu  
Primary Examiner  
Art Unit 3748